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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/493,942	01/28/2000	James Y.C. Chang	36491/LTR/B600	2849

26111 7590 06/13/2002

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EXAMINER

DONOVAN, LINCOLN D

ART UNIT	PAPER NUMBER
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2832

DATE MAILED: 06/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/493,942

Applicant(s)

Chang

Examiner

Lincoln Donovan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Mar 19, 2002
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 10-12, 14, 15, and 17-28 is/are pending in the application.
- 4a) Of the above, claim(s) 10-12 and 17-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 14, 15, and 24-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 21 6) ☐ Other:

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DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 10-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 lacks sufficient structural support for the functional language of “produce the fingered region.” Claims 11-12 inherit the defects of the parent claim.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 5-7, 10-12, 14 and 24-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuettner et al. [US 5,852,866] in view of Nasserbakht [US 6,008,713] and Sato et al. [US 5,966,063].

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Kuettner et al. disclose an integrated inductor comprising:

- a spiral inductor metalization pattern [figure 3] including a plurality of parallel tracks [21] in a spiral pattern having a square configuration on a common layer, each track having first and second ends.

Kuettner et al. discloses the instant claimed invention except for: the metalization pattern being formed on a substrate and the first and second ends being connected together.

Nasserbakht discloses a monolithic inductor being formed on a substrate.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the metalization patterns of Kuettner et al. on a substrate, as suggested by [and strongly implied by but not explicitly stated] by Nasserbakht, for the purpose of easily integrating the inductor.

Sato et al. discloses a spiral inductor metalization pattern [figures 20A-C] having a plurality of conductor lines in parallel with each other and coupled together at their starting and end points.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to couple the end points of the conductors of Kuettner et al., as modified, as suggested by Sato et al., for the purpose of reducing the resistance of the winding.

Regarding claim 2, official notice is taken that a CMOS process is a well known method of producing an integrated inductor.

Regarding claim 6, Kuettner et al. discloses multiple layers interconnected with vias [25].

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Regarding claims 10-12, Nasserbakht discloses the use of N+ diffusion layer beneath the metal layer.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the n+ diffusion layer for the purpose of generating a desired reverse bias and increasing the Q factor. The specific arrangement of the layer would have been an obvious design consideration based on the specific application and operating environment of the inductor [column 4, lines 2-20].

5. Claims 4 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuettner et al., as modified, as applied to claim 1 above, and further in view of Fawal et al. [US 6,049,258].

Kuettner et al., as modified, discloses the instant claimed invention except for the specific shape of the inductor metalization layers and the use of the inductor in transmission lines.

Regarding claim 4, Fawal et al. discloses the use of orthogonal shaped metalization layers.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the orthogonal shape of Fawal et al. in Kuettner et al., as modified, for the purpose of optimizing the sizing of the inductor.

Fawal et al. discloses the inductor being used for transmission lines.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the transmission design of Fawal et al. with the inductor design of Kuettner et al., as modified, for the purpose of optimizing the transmission network.

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Response to Arguments

6. Applicant's arguments filed 03-13-02 have been fully considered but they are not persuasive.

Applicant argues:

[1] Nasserbakht does not teach a N⁺ diffusion region providing a shield beneath the spiral providing a shielding effect; and

[2] Kuetter does not disclose the specific winding pattern and layer design.

Examiner disagrees:

Regarding [1]: Nasserbakht discloses a doped well providing a N⁺ region beneath the spiral, see cutaway view shown in figure 3 showing the N⁺ region of the shielding well beneath the spiral.

Regarding [2]: Kuetter discloses a multilayered winding design connected by means of vias mounted within a substrate, see figures 2a-2e. A skilled artisan would have been motivated to design the specific arrangement to optimize the inductor and provide the desired function.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

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calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Lincoln Donovan whose telephone number is (703) 308-3111.

The fax number for this Group is (703)308-7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703)308-0956.

LDD

June 2, 2002


LINCOLN DONOVAN
PRIMARY EXAMINER
GROUP 2100